

WHAT IS CLAIMED IS:

1. A semiconductor processing process control system comprising:

5 a process controller main body having a function of controlling part of controls of processes for semiconductor processing, which is independent from semiconductor processing devices and processing targets; and

10 a plurality of control variable computing sections provided for respective the semiconductor processing devices and the processing targets, and detachably inserted into to the process controller main body to obtain control variables of semiconductor processing devices which meet the semiconductor processing devices and the processing targets, the process controller main body
15 controlling processes of semiconductor processing on the basis of the control variables obtained by the control variable computing section inserted therein.

2. The semiconductor processing process control system
20 according to claim 1 wherein each the control variable computing section includes:

a computation managing section for managing the flow of computing procedures of control variables; and

25 a formula section having a set of formulas to be used by the computation managing section.

3. The semiconductor processing process control system according to claim 1 wherein each the control variable computing section includes:

30 a control computing section exclusive for computation of control variables of the semiconductor processing devices; and

a real processing totaling section exclusive for computation based on processing data from the semiconductor processing devices.

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4. The semiconductor processing process control system according to claim 1 wherein the process controller main body

includes:

a flow information acquiring section which acquires process flow information;

5 a process judging section for acquiring identifying information, which identifies the semiconductor processing devices, contents of processing and status of a process from the process flow information;

10 a control computation select/execute section responsive to the identifying information to select and activate agreeable one of the control variable computing sections;

a control variable sending section which receives the control variables obtained by computation by activated one of the control variable computing sections, and sends it to the semiconductor processing device.

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5. The semiconductor processing process control system according to claim 1 wherein each the control variable computing section has the function of acquiring information about a processing speed on the basis of the identifying information and
20 computing a processing time from the processing speed.

6. The semiconductor processing process control system according to claim 5 wherein, when each the control variable computing section acquires information about the processing speed,
25 it first obtains a processing condition and a material of the film to be processed from the content of processing in the identifying information, and then acquires the information about the processing speed on the basis of these processing condition and the material of the film to be processed.

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7. The semiconductor processing process control system according to claim 6 further comprising:

35 a correspondence information data section having data which establishes relation between a logical step processing corresponding to the processing condition and a physical step processing which includes all necessary processing steps for controlling the semiconductor processing device according to the

logical step processing.

8. The semiconductor processing process control system according to claim 1 wherein each the control variable computing
5 section includes:

a first control variable computing section having the function of acquiring processing data by the semiconductor processing device and holding it in a temporary data holding section; and

- 10 a second control variable computing section having the function of judging whether to omit part of processes in accordance with the processing data held in the temporary data holding section.

9. A semiconductor processing process control system
15 comprising:

a process controller main body having a function of controlling part of controls of processes for semiconductor processing, which is independent from semiconductor processing devices and processing targets;

- 20 a plurality of control variable computing sections provided for respective the semiconductor processing devices and the processing targets to obtain control variables of semiconductor processing devices which meet the semiconductor processing devices and the processing targets; and

- 25 a control variable computation method section detachably inserted into the process controller main body to manage the control variable computing sections according to a computing method over a plurality of predetermined processes, the control variable computing sections detachably inserted into the control variable
30 computation method section, the process controller main body controlling processes of semiconductor processing on the basis of the control variables obtained by the control variable computation method section inserted into the process controller main body and the control variable computing section inserted
35 into the control variable computation method section.

10. The semiconductor processing process control system

according to claim 9 wherein each the control variable computing section includes:

a computation managing section for managing the flow of computing procedures of control variables; and

5 a formula section having a set of formulas to be used by the computation managing section.

11. The semiconductor processing process control system according to claim 9 wherein each the control variable computing
10 section includes:

a control computing section exclusive for computation of control variables of the semiconductor processing devices; and

a real processing totaling section exclusive for computation based on processing data from the semiconductor
15 processing devices.

12. The semiconductor processing process control system according to claim 9 further comprising:

a correspondence information data section having data which
20 establishes relation between a logical step processing corresponding to the processing condition and a physical step processing which includes all necessary processing steps for controlling the semiconductor processing device according to the logical step processing.

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13. The semiconductor processing process control system according to claim 9 wherein each the control variable computing section includes:

a first control variable computing section having the
30 function of acquiring processing data by the semiconductor processing device and holding it in a temporary data holding section; and

a second control variable computing section having the function of judging whether to omit part of processes in accordance
35 with the processing data held in the temporary data holding section.

14. A semiconductor processing process control system for

controlling a plurality of processes for semiconductor processing, comprising:

a skip judgment request receiving section which receives a request for judgment whether a process can be skipped or not;

5 a plurality of judgment plug-in each having a step skip judgment logic for judging whether a certain process can be skipped or not;

a skip judgment yes/no section for searching out a judgment plug-in corresponding to a process to be judged, which is received
10 by the skip judgment request receiving section, from the plurality of judgment plug-in;

a judgment execute section which activates the judgment plug-in searched out by the skip judgment yes/no section and makes the judgment plug-in judge whether the one process can be skipped
15 or not, on the basis of the step skip judgment logic;

a judgment result receiving section which receives from the activated judgment plug-in a result of judgment whether the one process can be skipped or not; and

a skip execute section which effects skipping of the one
20 process when the result of judgment indicates that the process can be skipped.

15. The semiconductor processing process control system according to claim 14 wherein each the judgment plug-in includes:

25 a spec database holding a set of reference specs which are references for judgment whether a process can be skipped or not;

a spec search section responsive to an instruction from the judgment execute section to acquire a reference spec from the spec database;

30 a QC result extracting section which acquires quality information from a quality control database; and

a skip judging section, which receives, the reference spec from the spec search section and the quality information from the QC result extracting section to judge whether a process can
35 be skipped or not on the basis of the reference spec and the quality information.

16. The semiconductor processing process control system according to claim 15 further comprising:

a know-how database which stores results of judgment whether a process can be skipped or not; and

5 a transmitting section that sends data in the know-how database to an external system.

17. A method for controlling a semiconductor processing process control system which includes a process controller main body having
10 the function of controlling part of controls of processes for semiconductor processing, which is independent from semiconductor processing devices and processing targets, comprising the steps of:

selecting one of a plurality of control variable computing
15 sections which are provided for respective the semiconductor processing devices and the processing targets and can be detachably inserted into the process controller main body, and inserting the control variable computing section, which is selected, into the process controller main body;

20 operating the control variable computing section inserted into the process controller main body to obtain a control variable of a semiconductor processing device, which is agreeable with the semiconductor processing devices and the processing targets; and

25 operating the process controller main body to control a process for semiconductor processing on the basis of the control variable obtained.

18. A method for controlling a semiconductor processing process control system which includes a process controller main body having
30 the function of controlling part of controls of processes for semiconductor processing, which is independent from semiconductor processing devices and processing targets, comprising the steps of:

35 selecting at least one of a plurality of control variable computing sections, which are provided for respective the semiconductor processing devices and the processing targets;

selecting one of a plurality control variable computation method sections which manage the control variable computing sections over a plurality of processes, the control variable computation method sections being configured to be detachably inserted into the process controller main body when necessary, and the control variable computing sections being configured to be detachably inserted into the control variable computation method sections;

inserting the control variable computing sections selected into the control variable computation method section selected, and inserting the control variable computation method section into the process controller main body;

operating the control variable computation method section inserted into the process controller main body and the control variable computing section inserted into the control variable computation method section to obtain a control variable of a semiconductor processing device which is agreeable with the semiconductor processing devices and the processing targets; and

operating the process controller main body to control processes for semiconductor processing on the basis of the control variable obtained.

19. A method for controlling a semiconductor processing process control system configured to control a plurality of processes for semiconductor processing, comprising:

a skip judgment request receiving step for receiving a request for judgment whether a process can be skipped or not;

a search step for searching out a judgment plug-in corresponding to a process to be judged, which is received by the skip judgment request received in the skip judgment request receiving step from a plurality of judgment plug-in, each the judgment plug-in having a step skip judgment logic for judging whether a certain process can be skipped or not;

a judgment execute step for activating the judgment plug-in searched out to judge whether the one process can be skipped or not;

a judgment result receiving step for receiving from the

activated judgment plug-in a result of judgment whether the one process can be skipped or not; and

a skip execute step which effects skipping of the one step when the result of judgment indicates that the process can be

5 skipped.